



ENERGY[®]

L O U D S P E A K E R S

M U S I C A L T R U T H

A u d i s s e y
A P S - 5 + 2

o w n e r s m a n u a l

IMPORTANT SAFETY INSTRUCTIONS

- **Read Instructions** - All safety and operating instructions should be read before the product is operated.
- **Retain Instructions** - The safety and operating instructions should be retained for future reference.
- **Heed Warnings** - All warnings on the product and in the operating instructions should be adhered to.
- **Follow Instructions** - All operating and use instructions should be followed.
- **Cleaning** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- **Attachments** - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
- **Water and Moisture** - Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool.
- **Ventilation** - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. They should also never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
- **Power Sources** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, please refer to the operating instructions.
- **Grounding or Polarization** - This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

- **Power Cord Protection** - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
- **Overloading** - Do not overload wall outlets or extension cords, as this can result in a risk of fire or electric shock.
- **Object and Liquid Entry** - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
- **Servicing** - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- **Heat** - The product should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
- **Non-use Periods** - The power cord of the product should be unplugged from the outlet when left unused for a long period of time.
- **Damage Requiring** - The product should be serviced by qualified service personnel when
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The product has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. Product has been dropped, or the enclosure damaged.

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WELCOME TO THE WORLD OF ENERGY LOUDSPEAKERS.

We are sure you will enjoy this superb product. The following advice is offered to facilitate proper installation of your **ENERGY** speakers in your home.

Extensive research along with great care at every design stage has enabled **ENERGY** to produce speakers with extraordinary performance characteristics: a performance level that is equal, or superior to other loudspeakers costing many times their price.

The finest components and materials, made with sophisticated manufacturing and quality control ensure that you will enjoy this exceptional performance for many years.

IMPORTANT: Please retain the carton and packing material for this **ENERGY** product to protect it in the event it ever has to be shipped to a service center for repair. Product received damaged by a service center that has been shipped by the end user in other than the original packaging, will be repaired, refurbished and properly packaged for return shipment at the end user's expense.

FEATURES AND BENEFITS

Built in Powered Subwoofer

In addition to the advantages of full range ASSYMETRICAL sound reproduction, the twin 150-watt subwoofer sections produce the deep, powerful bass extension only a high quality powered subwoofer can create in a compact speaker of this size. This integrated design, with pre-set calibration, ensures seamless blending between low, mid and high frequencies. It also means your APS 5+2 needs a minimum of space and set-up requirements in your home. All operating controls are conveniently located on the amplifier panel which is on the rear of your loudspeaker cabinet.

Auto-on/Auto-off

The subwoofer section of the APS 5+2 is equipped with a special "Auto-on/Auto-off" circuit. This circuit automatically turns the subwoofer section on as soon as it senses a signal. At a predetermined time after the program signal ends, this circuit automatically turns the subwoofer amplifier to "standby".

Clipping Protection

Many powered subwoofers on the market today produce distorted sounds as a result of clipping at high input levels. **ENERGY's** proprietary Clipping Protection Circuit (CPC) continuously senses the input signal level and automatically adjusts to prevent unwanted clipping of the waveform, maintaining undistorted bass reproduction.

Low Level RCA Input Jack

The RCA Input jack allows you to connect the subwoofer section of the APS 5+2 to

- EITHER:**
- 1) The subwoofer mono output of an A/V Receiver/Processor or
 - 2) The output of a Pre-Amp or A/V Processor when used with an external power amplifier.
 - 3) The subwoofer output of an External Crossover.

ROOM ACOUSTICS AND SPEAKER PLACEMENT

ENERGY loudspeakers have been designed to provide high performance in a wide variety of domestic settings. It is important to note however, that building structure, dimensions and furnishings all play a part in the quality of sound you will ultimately achieve. Where possible, the following should be taken into consideration when placing

ENERGY speakers in your listening room:

1. Low frequency performance (below 100 Hz) can be affected by the structure of the room. A solid floor is preferred to avoid exaggeration of low frequencies.
2. Rooms with different height, width and length are preferable for best low frequency performance.
3. Mid and high frequencies are affected by the mix of soft and hard furnishings in the room. An excess of soft items such as curtains, carpets, sofas and wall coverings can produce dull, lifeless sound reproduction. The same room without any soft furnishings will produce a brighter, harder sound, so a balance of soft and hard furniture, floor and wall coverings should be your goal for optimum sonic performance.

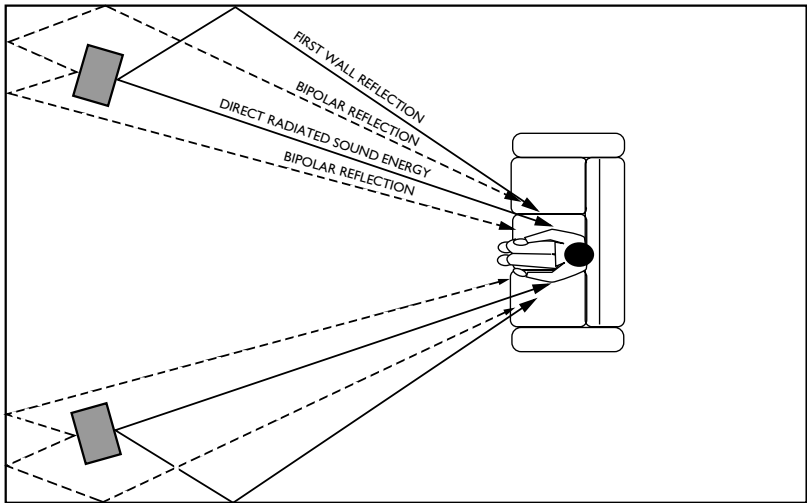
4. Most of the sound heard from a loudspeaker has been reflected from one or more walls of the room. Usually, less than half the sound is heard directly from the loudspeaker. The remaining information you hear has been reflected from the surfaces of your room to create a life-like performance.

Reflective surfaces have individual sound absorption characteristics, and it is important for good stereo perception that frequency response be the same from both left and right channels. It is therefore important that consideration be paid to the left and right reflecting walls. First, they should be symmetrical, equally spaced from the speakers and the listeners. Second, they should have the same, or at least very similar reflective properties.

EXAMPLE: A curtain on one wall and a painted surface on the opposite wall will result in unbalanced reflections, which in turn, will affect the stereo image. Experiment with toe-in/toe-out positioning of your speakers until best results are achieved.

5. **ENERGY** Bipolar loudspeakers are designed to be free standing. They should therefore be positioned with an open space between the loudspeakers and the walls of the listening room.
6. For best results, placement distance from the rear wall should not be the same as from the side walls. The APS 5+2 should be positioned at least 18 inches (45cm) from the back wall. (see figure 1)
7. Spiked feet are recommended for stability on carpeted floors.
8. The APS 5+2 pair should be placed 6 to 10 feet (2-3 m) apart. The distance from the loudspeakers to the listener should be about 1 to 1.5 times the distance separating the speakers. (see figure 1)

SPEAKER PLACEMENT (FIGURE 1)



Selection of Proper Wire

We recommend the use of high quality speaker cable. The speaker cable you select will ideally be fitted with high quality connectors with either 5/16" spade lugs or dual banana plugs.

In most installations, ordinary lamp cord (16-18 gauge) has enough resistance to degrade the signal between amplifier and speakers, particularly in lengths over 10 feet (3 m). If possible the speaker cables should be the same length for both channels and the shorter they are, the better the sonic performance will be.

CAUTION: When connecting your speakers to your sound system, turn your amplifier off to avoid serious damage which could result from the unintentional shorting of the speaker leads.

External Amplifier Requirements

ENERGY loudspeakers have been designed to be driven to high listening levels with moderate power, while at the same time being capable of handling the power output of large amplifiers.

Note: The **ENERGY** APS 5+2 impedance is 6 ohms nominal (4 ohm minimum) and will function well with most amplifiers sold today. If you are connecting two speakers to the same channel of an amplifier/receiver, check with the amplifier manufacturer to ensure that it can handle minimum impedance of 2 ohms.

SETTING UP YOUR ENERGY SPEAKERS

The Recommended Connection Method is Speaker Level External Amplifier to Speaker Connection

NOTE: In Home Theater Applications, the LED, which is located behind the grill cloth of the APS 5+2 may occasionally switch from Red to off during extended periods of dialogue, when low frequency information is absent. The LED will switch (On) when the amplifier senses the return of low frequency signals.

Since the **APS 5+2** is an integrated speaker/powered subwoofer combination the "Speaker Level" Connection method insures optimum blending and level balancing between low, mid and high frequencies.

We, therefore, recommend using the "Speaker Level" connection method for best performance. (See Figure 2,3 or 4)

The **APS 5+2** utilizes two sets of binding posts. The upper set is for high frequencies and the lower set for mid and low frequencies. Bi-amp/bi-wire allows three different wiring options. Ensure that all terminals are tightened firmly by hand.

IMPORTANT: FOR Speaker LEVEL OPERATION THE SUBWOOFER INPUT SELECTOR SWITCH **MUST BE SET TO THE CENTER "SPEAKER INPUT" POSITION. OTHERWISE, THE SUBWOOFER'S AMPLIFIER WILL NOT FUNCTION.**

1) **Conventional Hook-up** (See figure 2)

You will note metal shorting straps have been installed between the binding posts. Positive (+) to Positive, Negative (-) to Negative. Connect speaker wire from the red positive (+) terminal on your amplifier to lower positive terminal on speaker. Connect black negative (-) terminal from your amplifier to lower negative terminal on speaker.

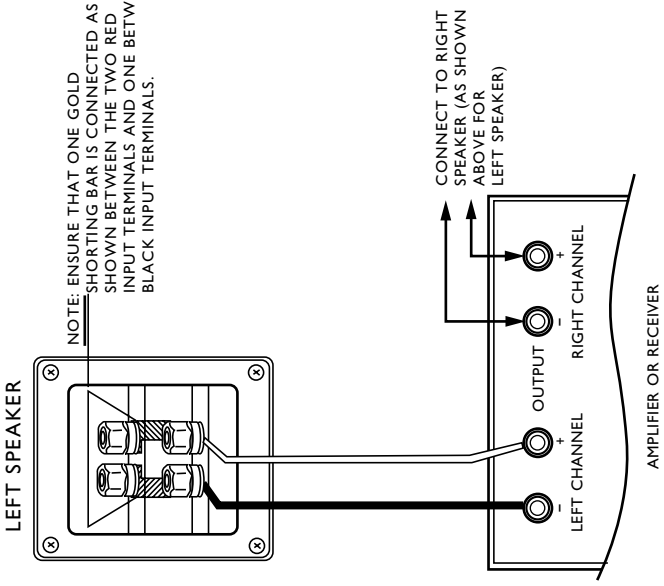
2) **Bi-Wire Hook-up** (See figure 3)

Remove the shorting straps. Use two dual conductor cables; one cable for low frequencies and one cable for high frequencies. Separate connections are made between the power amplifier to the low frequency binding posts on the speaker and from the power amplifier to the high frequency binding posts. This allows you to choose separate wires that are best for the low or high frequencies

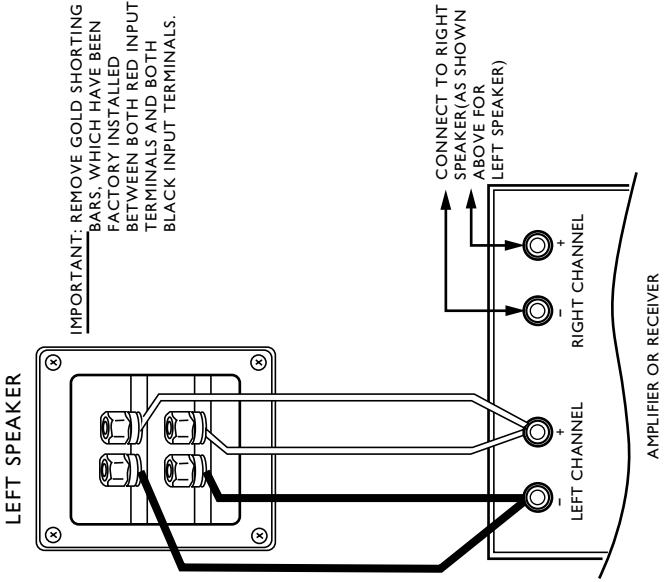
3) **Combination Bi-Amp/Bi-Wire Hook up** (See figure 4)

This method uses separate amplifiers for the low frequency section and high frequency section of the speaker and dramatically improves sonic performance. But, the amplifiers gains and the phase relationship of the amplifiers input to output must be identical.

CONVENTIONAL HOOKUP (FIGURE 2)



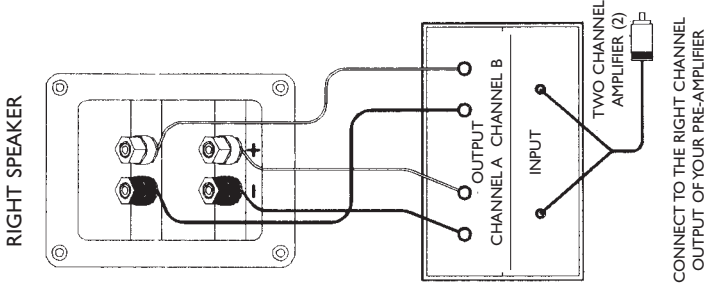
BI-WIRE HOOKUP (FIGURE 3)



COMBINATION BI-AMP/BI-WIRE HOOKUP

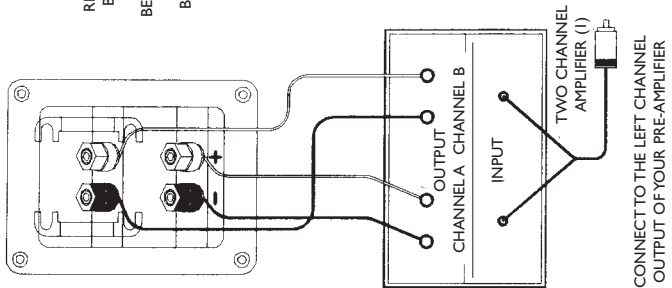
(Figure 4)

(THIS METHOD USES TWO IDENTICAL CHANNEL AMPLIFIERS FOR IMPROVED SYSTEM PERFORMANCE)



IMPORTANT

REMOVE GOLD SHORTING BARS WHICH HAVE BEEN FACTORY INSTALLED BETWEEN BOTH RED INPUT TERMINALS AND BOTH BLACK INPUT TERMINALS.



CONNECT TO THE LEFT CHANNEL OUTPUT OF YOUR PRE-AMPLIFIER

Connection Method Using the “Subwoofer” output of an A/V Receiver or Processor (See figure 5)

This connection can be made with an RCA interconnect cable in combination with a “Y” connector available at most audio stores. The Y Connector splits the mono subwoofer output signal into two outputs. One is fed to the left APS 5+2 RCA input and the other is fed to the right APS 5+2 RCA input. The above connection would normally be made with long RCA interconnect cables, one for each speaker. Make sure the subwoofer input selector switch is in the upper (180°) or lower (0°) position.

Low level Connection method using a pre-amp or A/V processor and separate power amplifiers (See figure 6)

This connection can be made with RCA interconnect cables in combination with a “Y” connector available at most audio stores. The “Y” connector splits the pre-amp or A/V processors output into two outputs. One of the “Y” connector outputs is fed to the power amplifier input; the other to the RCA input of the APS 5+2. This process must be repeated for each channel connected to an APS 5+2. Make sure the subwoofer input selector switch is in the upper (180°) or lower (0°) position.

Controls Subwoofer Input Selector Switch

A three position toggle switch that allows the user to select between RCA Input (0° or 180°) or Speaker Input (internally connected).

Speaker Level Connection Method: The toggle switch should be set to the middle position.

Low Level Connection Method: The toggle switch on both of your left and right APS 5+2 speakers should be set to either the 0° or 180° position. To determine the best position for your application, play a recording with male vocal content and set the toggle switch on both speakers to 0° and listen. Then, switch both toggles to 180° and listen again. Choose the toggle switch position that produces the fullest sound, and set both speakers to that selection.

Level Control

This rotary control adjusts the bass output level of the subwoofer section of the APS 5+2.

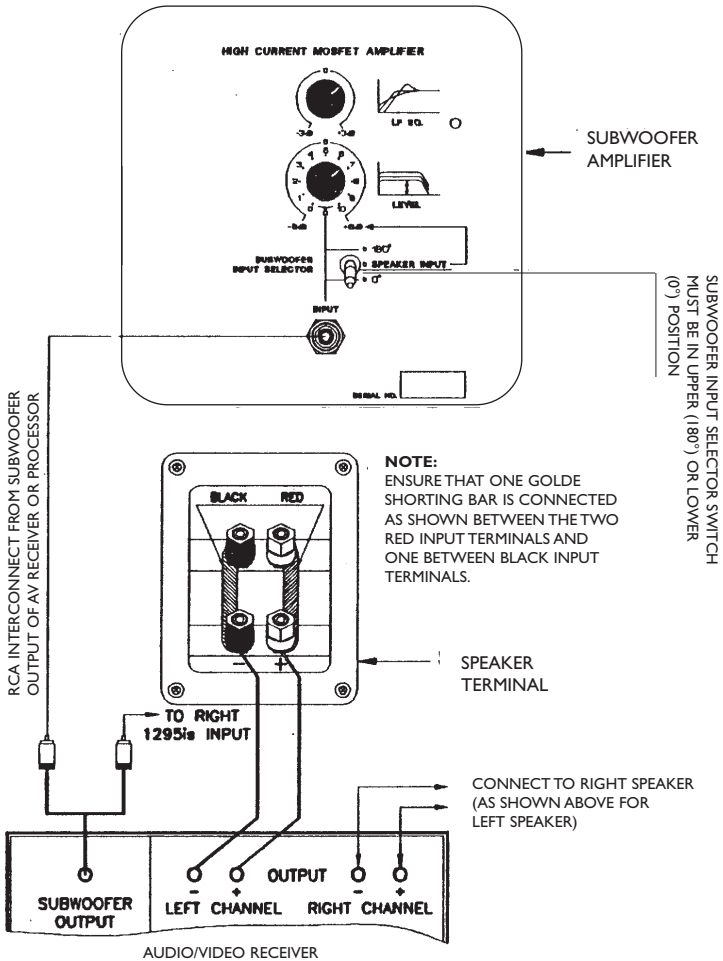
Speaker Level Connection Method: Settings between 9 and 12 o'clock produce balanced output between low, mid and high frequencies. For more bass output, rotate clockwise.

Low Level Connection Method: Since each receiver/processor produces different output levels, experiment to find the most suitable selection for your listening needs.

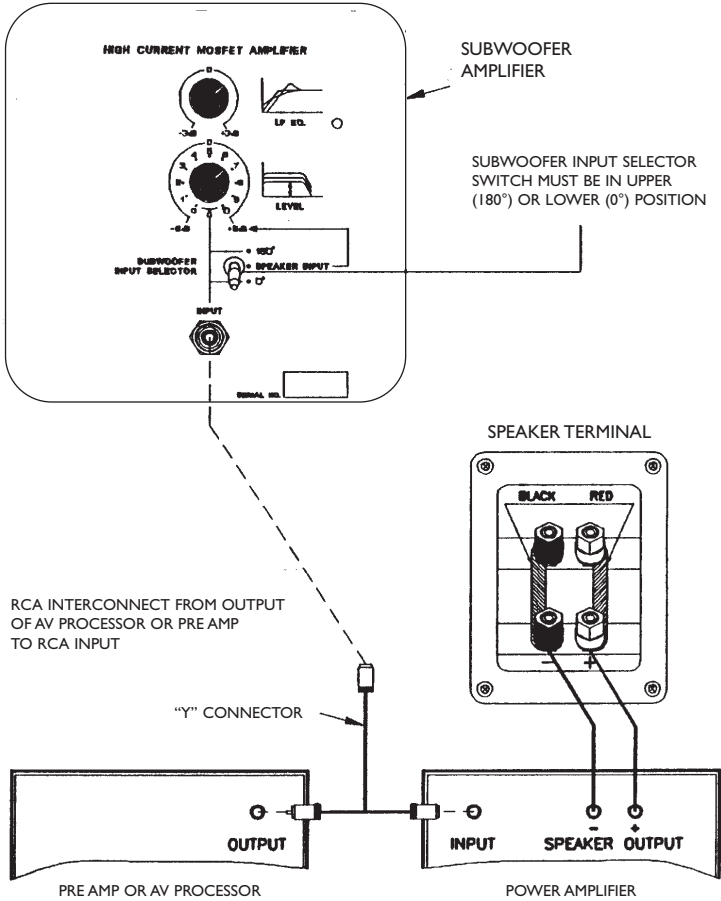
Low Frequency (LF) EQ. Control

In either Speaker Level or Low Level connection, this control adjusts the extreme low frequency characteristics of the APS 5+2. It is continuously variable from -3dB through 0 to +3dB to precisely match the subwoofer section of the APS 5+2 with the acoustics of your listening room. If bass is too boomy and lacks deep detailed bass, adjust this control counter-clockwise until desired performance is achieved.

CONNECTION METHOD USING THE "SUBWOOFER" OUTPUT (FIGURE 5)



CONNECTION METHOD USING "PRE-AMP OR A/V PROCESSOR" (FIGURE 6)



NOTE: REPEAT CONNECTIONS FOR EACH ADDITIONAL CHANNEL

Care of Finish

Your **ENERGY** speakers are attractively finished and should be gently wiped clean, from time to time, with a damp cloth to remove any dust or stains.

CAUTION ! Distortion Causes Speaker Damage !

When an amplifier is "overdriven" it produces distorted output power several times greater than its rated power. All amplifiers produce high levels of distortion when they are driven beyond their rated power output and this distortion can damage any speaker. Overdriven amplifier distortion is called "Clipping".

Clipping can be identified by a fuzzy or distorted sound. If this is heard, lower the volume immediately to avoid damage to your system.

If louder volumes are desired, the only practical solution is to obtain an amplifier capable of more clean (undistorted) output power.

SPECIFICATIONS

System Type	Assymetrical Radiator; with Integrated Powered Bipolar Subwoofer.
Tweeters:	2 - 1" (25mm) Aluminum Dome
Mid Range Drivers:	2 - 5 1/2" (14cm) with Injection Molded Polypropylene Cones terminated via Butyl Surrounds
Woofers:	2 - 8" (20cm) Long Throw Polypropylene
System Frequency Response:	20Hz-22KHz
Sensitivity:	90dB
Impedance:	6 ohms Nominal/ 4 ohms Minimum
Recommended Amplifier:	30 - 200 watts RMS per channel
Crossover Frequencies:	80Hz, 2.0kHz
Internal Subwoofer Amplifier Type:	High Current Discrete MOSFET, with Isolated Power Supply Module
Power Output:	150 watts, 600-watts Instantaneous Peak Output
Low Frequency Equalization:	Continuously variable from -3dB @ 20Hz to +3dB @45Hz
Inputs:	Gold Plated Low Level (RCA) Gold Plated, Bi-amp, Bi-Wire High Level
Dimensions: (HxWxD)	45 3/8" x 9 1/8" x 15 3/4" 115.25 cm x 23.15 cm x 40.05 cm
Weight:	90 lb / 40.8 kg
Finish:	High Gloss Black Lacquer Top & Bottom, Black Acoustically Transparent Grille Cloth
Supply Voltage:	110/120v, 60 Hz / 220/240v, 50 Hz

LIMITED WARRANTY POLICY

Warranty in the United States and Canada

ENERGY warrants this product to the retail purchaser against any failure resulting from original manufacturing defects in workmanship or materials. The warranty is in effect for a period of: Speaker Section - five (5) years, Amplifier Section one (1) year from date of purchase from an authorized **ENERGY** dealer and is valid only if the original dated bill of sale is presented when service is required.

The warranty does **not** cover damage caused during shipment, by accident, misuse, abuse, neglect, unauthorized product modification, failure to follow the instructions outlined in the owner's manual, failure to perform routine maintenance, damage resulting from unauthorized repairs or claims based upon misrepresentations of the warranty by the seller.

Warranty Service

If you require service for your **ENERGY** loudspeaker(s) at any time during the warranty period, please contact: 1) the dealer from whom you purchased the product(s), 2) **ENERGY** National Service, 203 Eggert Road, Buffalo, N.Y. 14215 Tel: 716-896-9801 or 3) **ENERGY** Loudspeakers division of Audio Products International Corp., 3641 McNicoll Avenue, Scarborough, Ontario, Canada, M1X 1G5, Tel: 1-416-321-1800

You will be responsible for transporting the speakers in adequate packaging to protect them from damage in transit and for the shipping costs to an authorized **ENERGY** service center or to **ENERGY** Loudspeakers. If the product is returned for repair to **ENERGY** Loudspeakers in Scarborough or Buffalo, the costs of the return shipment to you will be paid by **ENERGY** Loudspeakers, provided the repairs concerned fall within the Limited Warranty. **ENERGY** Warranty is limited to repair or replacement of **ENERGY** products. It does not cover any incidental or consequential damage of any kind. If the provisions in any advertisement, packing cartons or literature differ from those specified in this warranty, the terms of the Limited Warranty prevail.

Warranty Outside of the United States and CANADA

Product warranties may be legislated differently from one country to another. Ask your local dealer for details of the LIMITED WARRANTY applicable in your country.

WARNING

IMPORTANT TECHNICAL NOTE PLEASE READ BEFORE OPERATING SPEAKERS

THE WARRANTY ON SPEAKERS IS VOID IF THE VOICE COILS ARE BURNED OR DAMAGED AS A RESULT OF OVERPOWERING OR CLIPPING.

OVERPOWERING: The volume control of most amplifiers and receivers is a logarithmic type, which means that full power may be reached with volume control at as little as the halfway point. In addition, operating the loudness feature or boosting the treble or bass controls increases power output well beyond rated levels.

AS A RESULT OF THE ABOVE FACTORS, A 30 WATT AMPLIFIER CAN PRODUCE OUTPUT LEVELS OF OVER 100 WATTS AND MAY DAMAGE YOUR LOUDSPEAKER.

CLIPPING: Clipping refers to the power level at which an amplifier begins to distort a waveform by flattening its top and bottom into a square wave-shape. When fed to tweeters and/or midrange speakers, this may result in exceeding their maximum power handling capacity, causing damage to the speaker voice coil.

CLIPPING CAN BE IDENTIFIED BY A FUZZY OR DISTORTED SOUND. IF THIS IS HEARD, LOWER THE VOLUME IMMEDIATELY TO AVOID DAMAGE TO YOUR SYSTEM. CONTINUOUS CLIPPING WILL DAMAGE OR BURN OUT THE SPEAKERS.